

Abstract

A coating and coating process to improve the efficiency of hydrocarbon fueled engines, wherein the coating includes a high percentage of nickel to create a reaction which improves the combustion efficiency of the hydrocarbon fuel. The coating may also include chromium, iron, and other constituents and is applied to combustion surfaces with a sufficient bonding strength to allow the coating to function in the combustion chamber, while providing a surface having sufficient surface roughness to promote the chemical reaction underlying the combustion efficiency improvement. The nickel causes a catalytic cracking reaction to ease the combustibility of hydrocarbon molecules in the fuel.